

8.5.5 Conclusion

The Service believes that no more than one bull trout and 10 coastal cutthroat trout will be killed or injured during Project blasting, an unquantifiable but limited number of bull trout and coastal cutthroat trout will be killed or injured due to Project-related entrainment, and an unquantifiable, but limited amount of harm and harassment to bull trout, coastal cutthroat trout, bald eagle, and Columbian white-tailed deer will occur as a result of all other aspects of the Project's proposed action. The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. The Corps must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

9.0 CONSERVATION RECOMMENDATIONS

9.1 Introduction

Section 7 (a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of the threatened and endangered species. Conservation recommendations are discretionary measures suggested to minimize or avoid adverse effects of a proposed action on listed species, to minimize or avoid adverse modification of designated critical habitat, to help implement recovery plans, or to develop additional information.

9.2 Coastal Cutthroat Trout and Bull Trout Conservation Recommendations

The Service believes the following conservation recommendations are consistent with the Corps' Section 7(a)(1) obligations, and therefore should be implemented by the Corps:

9.2.1 Pile Dike Study

Coordinate with NMFS, Service, and OSHU/OGI to develop and implement a study that addresses the functioning of and continued need for pile dike fields in the lower Columbia River, estuary, and river mouth in relationship to on-going and future habitat conservation/restoration activities. The study results should be used to assess how pile dike fields might be modified

and/or removed from the lower Columbia River, estuary, and river mouth to enhance habitat conservation/restoration activities in a manner that does not compromise the integrity of the navigation channel. The results of this study should be incorporated into future consultations for the navigation channel.

9.2.2 Ecosystem Conservation/Restoration

There are a number of on-going habitat conservation/restoration activities in the lower Columbia River and estuary that are being conducted by the LCREP, the Salmon Recovery Funding Board, the Lower Columbia Fish Recovery Board, Oregon Watershed Enhancement Board, and a number of non-profit organizations. Based on the need to support this continuing work, and NMFS and the Service's future fish and wildlife recovery efforts, the Corps should continue to implement habitat conservation/restoration activities in the lower Columbia River, estuary, and river mouth. Sources of restoration action ideas and appropriate Corps authorities include: the All-H document, NMFS' FCRPS Hydropower Opinion (RPA Action items 158 - 163; 194 - 197), Sections 1135, 206, and 536 of the Water Resources Development Act (WRDA), and the Corps General Investigation Report - Section 905(b) Analysis, Lower Columbia River Ecosystem Restoration, Oregon and Washington.

The Corps should explore how to employ regulatory flexibility as they implement their authorities when working with potential partners on conservation/restoration activities.

The Corps should continue to work on the implementation of LCREP's CCMP via providing policy and technical assistance. The Corps should also work with the LCREP partners to use their annual planning and congressional appropriation process to establish and provide the appropriate level of funding to implement the CCMP (in particular, Actions 1 - 12, and 28).

9.2.3 Sediment Budget for the Lower Columbia River and Estuary

Conduct a sediment budget study that includes an analysis of historic sediment volumes in the lower Columbia River, how sediment volumes changed with development of the FCRPS, and how the deepening of the navigation channel from 0-43 feet further modified sediment inputs and distribution into the lower Columbia River and estuary ecosystems. The Corps should ensure that development and implementation of this study is consistent with Action Items 158, of NMFS' FCRPS Hydropower Opinion.

9.2.4 Near-shore and Plume Study

Develop and implement a study(ies) examining the potential for impact to near-shore and plume environments produced by ocean disposal of sediments produced by the Project. The areas included in this study(ies) should include all existing and proposed disposal sites at the mouth of the Columbia River. The study should examine salmonid use of in these areas, (abundance, distribution, food resources, habitat). This study should build upon the current research being conducted by NMFS' Northwest Fisheries Science Center.

1. The study design and plan for ocean disposal of sediments should be submitted to NMFS and the Service for final approval.
2. The results of the study and the plan for ocean disposal of sediments should be presented to the adaptive management team for consideration during the Adaptive Management Process. The results of this study should be incorporated into future consultations for the navigation channel and the any future reinitiation of consultation activities stemming from the Mouth of the Columbia River maintenance project.

9.2.5 Public Involvement in the Adaptive Management Process

For the Adaptive Management Process to be successful, the process should be a transparent one. The annual adaptive management meetings should be open to the public, other agencies, and Tribes. During each meeting, there should be an opportunity for questions, comments, and technical input from the public, with response from the adaptive management team. Copies of all public comments, data, and information discussed during the meetings should be placed on the Corp's website.

9.2.6 Involvement of the Columbia River Tribes in Project Implementation

The Columbia River Tribes, represented by the Columbia River Intertribal Fish Commission (CRITFC), have specific technical expertise that should be included into the Project implementation. The Corps should encourage CRITFC participation in the following Project activities: the adaptive management process (see section 9.2.5 above); the monitoring program, the ecosystem research program; and the annual contaminants review team activities (see table 2.5 above). The Corps should also encourage CRITFC participation with the Regional Sediment Evaluation Team that is updating the DMEF manual. The Corps should provide funding for CRITFC involvement in these Project and Project-related activities.

9.2.7 OHSU/OGI ELCIRC Modeling

The OHSU/OGI ELCIRC model analyzed Columbia River estuary habitat opportunity changes between current and future Project conditions. It would be very useful to extend this analysis to riverine portions of the Project area. The Corps should fund the expansion of the ELCIRC model to incorporate the riverine portions of the Project area, and provide those modeling outputs to the Adaptive Management Team for review and consideration.

9.2.7 Pipeline Dredge Disposal

While coastal cutthroat trout and bull trout mainly use the upper 20 feet of the Columbia River and estuary's water column, these fish may also use deeper portions of the water column for movement and migration. Pipeline dredges, when disposing of materials in or adjacent to the navigation channel, release dredged materials below 20 feet in depth. Coastal cutthroat trout and bull trout using water deeper than 20 feet may temporarily encounter a turbidity plume associated with these disposal activities. Where feasible and safe, the Service recommends that the Corps release pipeline-dredged materials into as deep a depth as possible.

9.3 Bald Eagle Conservation Recommendation

9.3.1 Provide Bald Eagle Perch Sites

When installing the Miller/Pillar pile dike fields, provide a limited number of un-capped pilings for bald eagle perching locations.

9.4 Columbian White-tailed Deer Conservation Recommendations

9.4.1 Develop Columbian White-tailed Deer Habitat Management Plan for Cottonwood-Howard Islands

The Columbian White-tailed Deer Recovery Plan (Service 1983) indicates Cottonwood Island is a "high potential" Columbian white-tailed deer transplant site. To ensure proper management of future Columbian white-tailed deer habitat on Cottonwood/Howard Islands, and to ensure this future habitat is secure and the translocated sub-population is considered viable for future Columbian white-tailed deer delisting decisions, the Corps should assist the Service and the landowners with development and implementation of a Cottonwood/Howard Islands Columbian white-tailed deer habitat management plan. The Columbian White-tailed Deer Recovery Plan indicates "secure habitat" is free from adverse human impacts (e.g. unregulated heavy grazing by domestic animals, clearing of woody material, etc.) in the foreseeable future and is relatively safe from natural phenomena that would destroy its value to Columbian white-tailed deer. The

Columbian White-tailed Deer Recovery Plan indicates a viable sub-population is one who's probability of extinction is low, as determined by annual estimates of sub-population size, and whose numbers are large enough to minimize deleterious effects of inbreeding.

The Cottonwood/Howard Islands' Habitat Management Plan should be a signed, legally-binding, long-term agreement for beneficial management of habitat for Columbian white-tailed deer. The Management Plan should specify agreements on long-term management actions that are protective of Columbian white-tailed deer and provide funding commitments for long-term habitat management. Long-term Service certainty in future management decisions by Cottonwood/Howard Islands' landowner, based on commitment to implementation of the Cottonwood/Howard Islands' Habitat Management Plan, will be a strong reason to consider the future Cottonwood/Howard Islands' Columbian white-tailed deer sub-population as secure. Over time, with successful Cottonwood/Howard Islands translocation and colonization, it is hoped that Cottonwood/Howard Islands' Columbian white-tailed deer sub-population also will prove to be viable.

9.5 Conservation Recommendations Summary

The Service is very encouraged by the Corps' commitment to implement numerous Section 7(a)(1) activities as part of the Project. The above Conservation Recommendations are additional Section 7(a)(1) activities that would be beneficial to the conservation and recovery of lower Columbia River, estuary, and river mouth listed species.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

10.0 Concluding Statement

This concludes formal consultation and conference on the action outlined in the Corps' January 3, 2002 aquatic species BA. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information, including that information developed through the Project's monitoring and adaptive management activities, reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

The Corps may ask the Service to confirm the coastal cutthroat trout conference opinion as a biological opinion issued through formal consultation if coastal cutthroat trout is listed. The request must be in writing. If the Service reviews the proposed action and finds that there have been no significant changes in the action as planned or in the information used during the conference, the Service will confirm the conference opinion as the biological opinion on the project and no further section 7 consultation will be necessary.

After listing of the coastal cutthroat trout as threatened, and subsequent adoption of this conference opinion as the biological opinion for the Project, the Corps shall request reinitiation of consultation if: (1) the amount or extent of incidental take is exceeded; (2) new information, including that information developed through the Project's monitoring and adaptive management activities, reveals effects of the agency action that may affect the species or critical habitat in a